

No. 678,931.

Patented July 23, 1901.

J. H. BENNETT.
VALVE FOR OIL HOLES.

(Application filed Dec. 19, 1898.)

(No Model.)

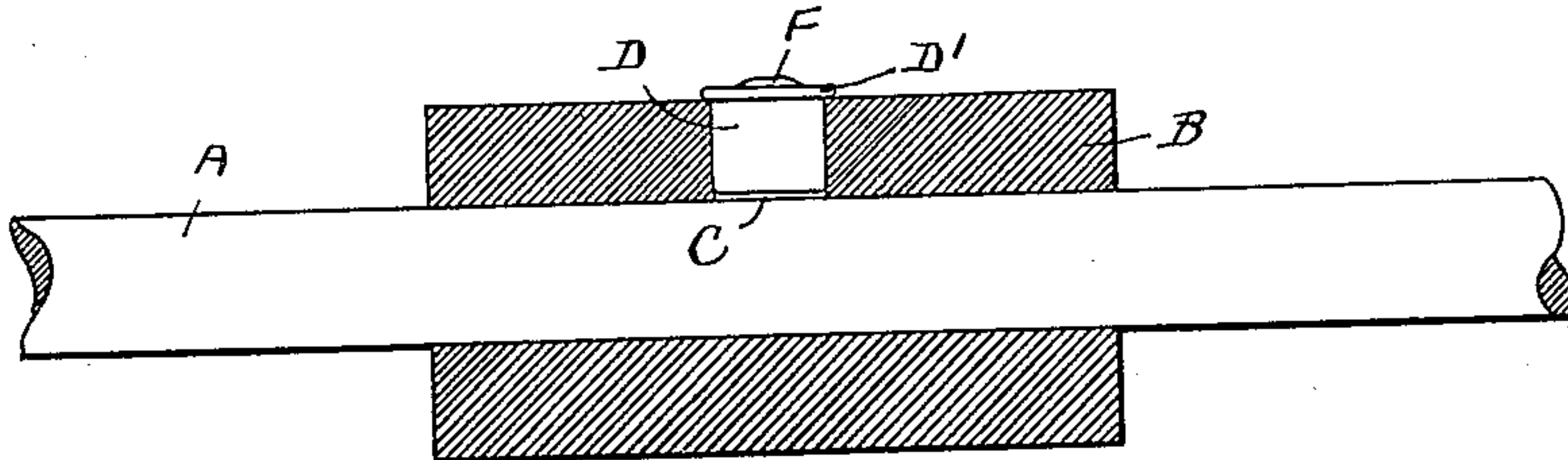


FIG. 1.

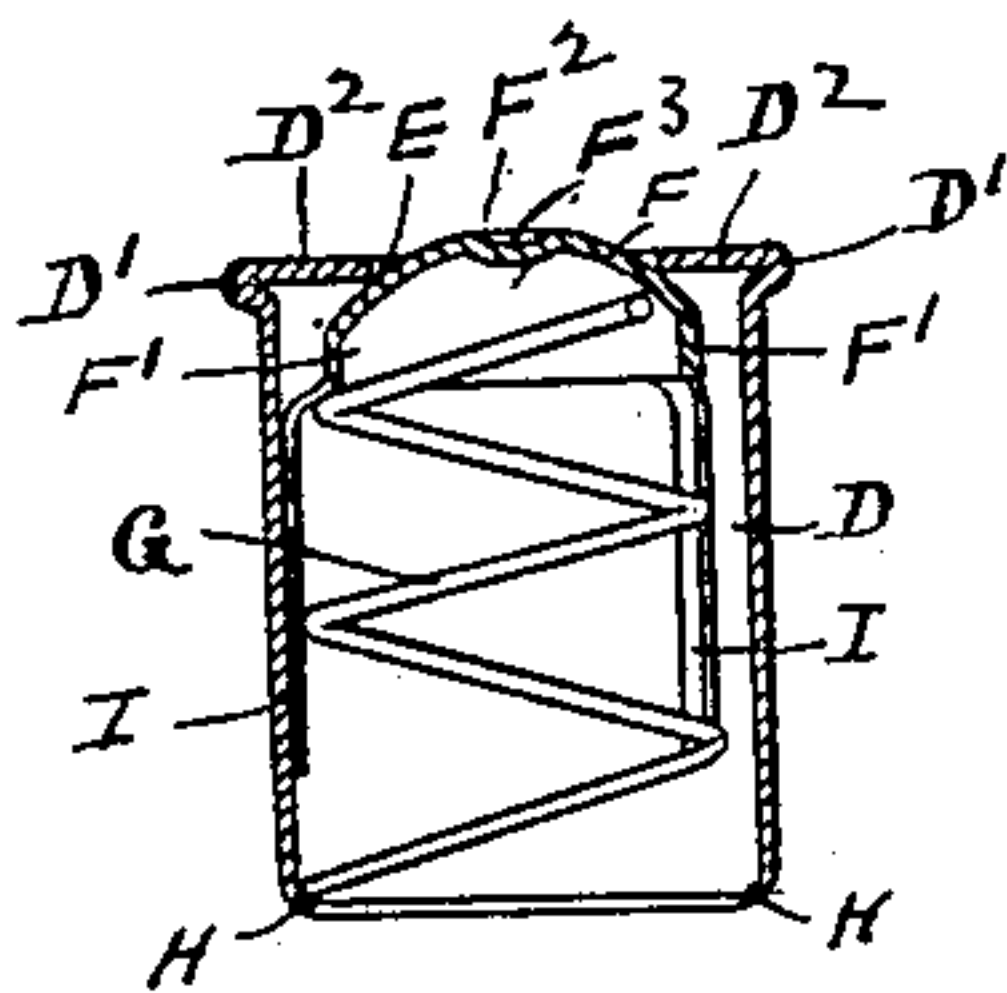


FIG. 2.

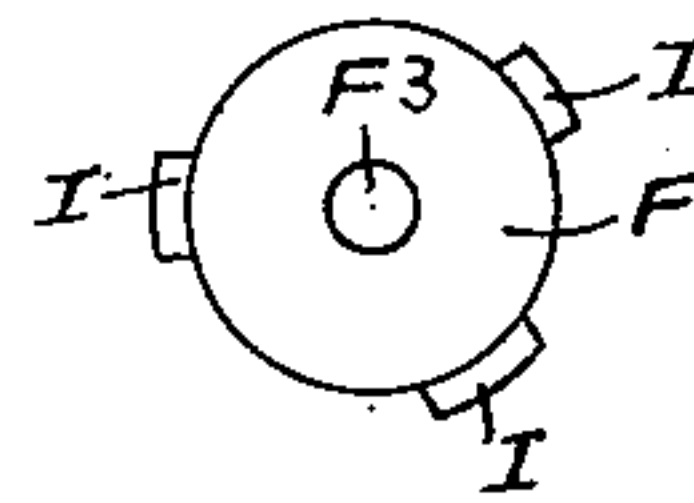


FIG. 3.

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UNITED STATES PATENT OFFICE.

JOHN H. BENNETT, OF WORCESTER, MASSACHUSETTS.

VALVE FOR OIL-HOLES.

SPECIFICATION forming part of Letters Patent No. 678,931, dated July 23, 1901.

Application filed December 19, 1898. Serial No. 699,659. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. BENNETT, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Valves for Oil-Holes, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

- 10 Figure 1 represents in central sectional view a journal-bearing of a shaft containing one of my improved oil-hole valves inserted in journal-boxes. Fig. 2 is a central vertical sectional view of my improved oil-hole valve. 15 Fig. 3 is a top view of the cup-shaped diaphragm by which the orifice for the admission of oil is closed.

Similar letters refer to similar parts in the different figures.

- 20 The object of my present invention is to provide a simple and efficient valve for oil-holes which can be cheaply constructed and is capable of hermetically closing the oil-hole and providing an ample passage-way for oil 25 when the valve is opened, and I accomplish these results by means of the oil-hole valve as hereinafter described, and set forth in the annexed claims.

- Referring to the drawings, A denotes a portion of a revolving shaft; B, the box in which the shaft is journaled, provided with an oil-hole C, which communicates with the journal-bearing of the shaft A and is closed by means of my improved oil-hole valve, which 35 consists of a cylindrical shell or case D, fitting the hole C and provided at its outer end with a flange D', which rests upon the outer surface of the box B. The cylindrical shell or case D is also provided at its upper end 40 with the internal flange D², having a central circular hole or opening E, which is closed by the inserted cup-shaped diaphragm F. The diaphragm F is stamped or drawn from a piece of sheet metal by suitable dies into a 45 cup shape, having vertical sides F' and a bottom F², curved in the form of a spherical arc. The diameter of the cup-shaped diaphragm F is greater than the circular hole or opening E and less than the diameter of the shell D, 50 and its curved bottom F² is normally held in contact with the circular edge of the opening E by means of the spiral spring G, having

one end pressing against the cup-shaped diaphragm F and its opposite end pressing against a narrow internal flange H at the 55 lower or opposite end of the shell D. Projecting from the edge of the cup-shaped diaphragm F are prongs I, which are bent downwardly and parallel with the axis of the shell D. Each of the prongs projects radially from 60 the edge of the cup-shaped diaphragm F far enough to bring the straight section of the prong against the inner surface of the shell D, thereby serving to hold the cup-shaped diaphragm F concentrically with the circular opening E. 65

The valve is opened by pressing the cup-shaped diaphragm F down against the tension of the spiral spring G, allowing oil to enter the annular space between the diaphragm F 70 and the cylindrical shell D and flow between the prongs I to the journal-bearing. As soon as pressure is withdrawn from the diaphragm F the valve is automatically closed by the action of the spiral spring G, which carries the 75 spherical surface F² into the opening E and in contact with the edge of the interior flange F².

The top of the diaphragm F is slightly depressed in the center, forming a recess F³ to receive the tip of an oil-can or other instrument, by which pressure is applied to depress 80 the diaphragm, the recess F³ serving to hold the tip of the oil-can concentrically with the curved top of the diaphragm.

What I claim as my invention, and desire 85 to secure by Letters Patent, is—

1. The combination with a shell or case with a passage therethrough for the flow of oil, a cup-shaped diaphragm by which said passage is closed, said diaphragm having 90 prongs projecting radially therefrom and bent parallel with and brought into contact with the sides of said case, whereby the diaphragm is held concentrically with said shell or case and at right angles with the sides, and a spring 95 applied to said diaphragm, substantially as described.

2. An oil-hole valve consisting of a shell or case adapted to be removably held in the oil-hole of a journal-bearing, said shell or case 100 having an internal flange at one end to receive the thrust of a spring and at its opposite end an internal flange provided with an opening to said shell or case, a cup-shaped diaphragm

by which said opening is closed, a spring bearing against said diaphragm and an internal flange of the shell or case and prongs projecting from said shell or case, substantially as described.

5 3. The within-described valve for oil-holes consisting of a shell or case D adapted to be inserted in the oil-hole of a journal-bearing, an internal flange H at one end of said shell,
10 an internal flange D² and an external flange D' at the opposite end of said shell, a cup-shaped diaphragm F adapted to bear against

the internal flange D², a spring G bearing against said cup-shaped diaphragm and the internal flange H, and prongs I projecting 15 from the edge of said diaphragm and bent downwardly in contact with the sides of said shell or case and outside said spring, substantially as described.

Dated this 13th day of December, 1898.

JOHN H. BENNETT.

Witnesses:

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